

This satellite program, which will be in operation in a couple of years, will make Canada the first western nation with its own domestic satellite communication system. The implementation of this will, among other things, provide a major stimulus in opening up the great Canadian north.

The objects are set forth in paragraph 5, subsection 2, which states that the Government shall utilize Canadian research, design and influence of our personnel, et cetera. In other words, this will use Canadian technology and facilities to the greatest possible extent.

It is safe to say that Canada is in great need of a satellite system to illuminate with wideband telecommunications its vast territory of 3.6 million square miles. Wideband microwave systems, of which Canada has over 10,000 miles, mostly in its southern reaches, cannot compete with satellite distribution for such an area, most of which is sparsely populated and with climatic conditions unfavourable to terrestrial systems. Therefore we will have to have the satellite system. It is a need that is expected will persist for a very long time into the future, notwithstanding continued growth of high capacity, reliable and low-cost microwave terrestrial systems, and of cable and waveguide systems. These systems will complement, not compete in the growth towards an integrated communications service of greater coverage, capacity, speed, flexibility and reliability.

Now I admit, honourable senators, that this is rather foreign to a non-scientific person, but I am assured the words I am using are correct and in the proper perspective. It is known that there are only certain positions in space, of which there are six which are available to give coverage to Canada. So, therefore, in my opinion, it is a matter of some urgency that Canada exert space pioneering action to lay claim to this coveted orbital position.

To continue further in the scientific vein, I am reading from the White Paper issued by the Honourable C. M. Drury, Minister of Industry, in March 1968. My reason for doing so, honourable senators, is that when I was asked to speak on this bill I went to see a telecommunications man and asked him for something that would give a layman an idea of what a satellite is, what it does, where it goes and how it operates. So, honourable senators, for the non-scientific persons in this chamber, I quote:

The time taken to complete one orbit increases as the height of the orbit is increased. At an altitude of 22,300 miles, the orbit "period" is twenty-four hours. If the satellite is launched into such an orbit exactly along the equator of the earth, it will then appear to be stationary relative to the earth, or "parked" in space. It is this type of "stationary" or "synchronous" satellite which is now favoured by most countries for communication purposes. It would carry a somewhat directional antenna, limiting its coverage to the area it is designed to serve. A satellite located in a stationary orbit over the equator, between 80° W and 120° W longitude would be "visible" from any point in Canada, including the far North up to 78° latitude. The most suitable position would be approximately midway between these two points, at roughly the same longitude as Winnipeg. From this position its antenna would provide coverage for the whole of Canada.

Now, honourable senators, at least you know what a satellite is, where it is going to be and how it is to operate.

As to cost, it is estimated that several million dollars will have to be spent on research and development for this program before the satellite is built and in operation at 22,300 miles. It was indicated by Dr. R. M. McIntosh, the Government consultant on Telesat, that the cost of research and development was equivalent to that of the building and operation of two highway interchanges on highway 401 near Toronto. I suggest that this total program will provide immediate stimulus to research and development in Canadian electronic companies and will provide the basis of export potential for this advanced technology. I commend this bill to honourable senators for their support.

On motion of Hon. Mr. Grosart debate adjourned.

INVESTMENT COMPANIES BILL

REPORT OF COMMITTEE

Hon. A. Hamilton McDonald, for Hon. Salter A. Hayden, Chairman of the Standing Senate Committee on Banking, Trade and Commerce, reported that the committee had considered Bill S-17 respecting investment companies, and had directed that the bill be reported with the following amendments:

Hon. Senators: Dispense.

(For text of report see Appendix, pp. 1669-79.)